9453549D
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GENERAL CHEMISTRY ANALYSIS DATA VALIDATION SUMMARY FOR DATA PACKAGE:
9401L205-WES-1478 (923-E418)

MEMORANDUM

TO: 200-UP-2 Project QA Record April 23, 1994

FR: Sandra Schildt, Golder Associates Inc.

RE: GENERAL CHEMISTRY ANALYSIS DATA VALIDATION SUMMARY FOR DATA PACKAGE 9401L205-WES-1478 (923-E418)

INTRODUCTION

This memorandum presents the results of data validation on data package 9401L205-WES-1478 prepared by Roy F. Weston, Inc (Weston). A list of the samples validated along with the analyses reported and the method of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09DT0	1/06/94	SOIL	SEE NOTE 1

Note 1: Samples were analyzed for IC anions and nitrate-nitrite using WHC approved methods.

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 to this memo provide the following information:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. One sample (1) was validated in this data set with a total of 6 determinations reported, all of which were deemed

Revised 4-25-94

valid. This results in a completeness of 100 percent which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

No minor deficiencies were identified during data validation which required qualification of the data.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF INORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected. The concentration reported is less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample detection limit corrected for sample aliquot size, dilution factors and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and was not detected. Due to a minor quality control deficiency identified during data validation, the concentration reported may not accurately reflect the sample detection limit. The associated data have been qualified as estimated but should be considered usable for decision making purposes.

BJ - Indicates the constituent was analyzed for and detected at a concentration less than the CRDL but greater then the IDL. Due to a minor quality control deficiency identified during data validation, The associated data have been qualified as estimated, but should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

UR - Indicates the constituent was analyzed for and not detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

~~SDG:~~ 9401205-WES-1478	VALIDATOR: A. Schuldt	DATE: 3/3/94	PAGE 1 OF 1
COMMENTS: Wet Chemistry			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
No qualification required			

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: 9401L205-WES-1478

	Samp#	B09DT0	
	Date	1-6-94	
	Location	---	
	Depth	---	
	Type	---	
	Comments	---	
Parameter	Units	Result	Q
PERCENT SOLIDS	%	98.200	
CHLORIDE	MG/KG	21.700	
FLUORIDE	MG/KG	3.000	
CYANIDE	MG/KG	1.000	U
SULFATE	MG/KG	12.200	
NITRATE+NITRITE	MG-N/KG	61.400	

Verified 4/11/94

800

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 02/02/94

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9401L20E

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B09DT0	% Solids	98.2	%	0.10	1.0
		Chloride by IC	21.7	MG/KG	1.3	1.0
		Fluoride by IC	3.0	MG/KG	2.5	1.0
		Cyanide, Total	1.0 U	MG/KG	1.0	1.0
		Sulfate by IC	12.2	MG/KG	1.3	1.0
		Nitrate Nitrite	61.4	MG-N/KG	5.1	50.0

9401205.0719

Verified
KMS
3/31/94

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ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client : WESTINGHOUSE HANFORD
RFW# : 9401L205

W.O. #: 06168-002-001-9999-00
Date Received: 01-11-94

INORGANIC

The following is a summary of the quality control results and a description of any problems encountered during the analysis of this batch of samples:

1. All sample holding times as required by 40CFR136 were met.

2. All preparation blank results were below the required detection limits.

3. All laboratory control standards (blank spikes) were within the control limits of 80-120%. All %RPD were within the 20% guidance limit.

4. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.

5. Matrix spike recoveries are summarized on the Inorganic Accuracy Report contained within this document. All recoveries were within the 75-125% guidance limits. All %RPD were within the 20% guidance limit.

6. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.

7. The analytical methods applied by the laboratory, unless otherwise requested, for the analysis of solid samples are derived from Test Methods for Evaluating Solid Waste (USEPA SW846).

RECORD COPY

MAR 1994
RECEIVED
SDLA

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

2.10.94
Date

pas/i01-205

4/1/94

011

9401L205

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator L E ROGERS, W.V. SETZER

Company Contact L E ROGERS — Telephone 376-7690

Project Designation/Sampling Locations 200-UP-2 — Collection Date 1-6-94

Ice Chest No. EFS-11 — Field Logbook No. EFL-1091

Bill of Lading/Airbill No. NA — Offsite Property No. OFSC 17596

Method of Shipment OVERNIGHT AIR SERVICE

Shipped to WESTON

Possible Sample Hazards/Remarks Keep samples at 4C (SOIL) RADIOACTIVE

Sample Identification 9401L205-001

1) BOGDTO

1,500ml P:CLP;TAL Metals,Hg,Ti Did not Recd 04 Lab
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

9401205 0012

2)

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

3) EP 1-10-94

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

[ ] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.V. Setzer 1115 1-6-94	Karen E. Rogers	1-6-94 1115
Karen E. Rogers 1-10-94 0715	W.V. Setzer	1-10-94 0715
W.V. Setzer		
FEDEX		1-11-94 9:30

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

0016 4/6/94

0012

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
				(D)	(E)

PROJECT: 200-UP-2	DATA PACKAGE: 9401x205-WES-1478	
VALIDATOR: A. Schilt	LAB: Weston	DATE: 3/31/94
CASE: NA	SDG: NA	

ANALYSES PERFORMED

☑ Anions/IC	☐ TOC	☐ TOX	☐ TPH-418.1	Oil and Grease	Alkalinity
☐ Ammonia	☐ BOD/COD	☐ Chloride	☐ Chromium-VI	☐ pH	☑ NO_3/NO_2
☐ Sulfate	☐ TDS	☐ TKN	☐ Phosphate	E7 only	☐
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX B09DT0 / soil

9401x205 0124

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . (Yes) No N/A

Is a case narrative present? . . . . . (Yes) No N/A

Comments: _____

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments: _____

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

3. INSTRUMENT CALIBRATION

Was initial calibration performed for all applicable analyses? (Yes) No N/A
Are initial calibration results acceptable? . . . . . (Yes) No N/A
Was a calibration check performed for all applicable analyses? (Yes) No N/A
Are calibration check results acceptable? . . . . . (Yes) No N/A
Comments: _____

4. BLANKS

Were laboratory blanks analyzed? . . . . . (Yes) No N/A
Are laboratory blank results acceptable? . . . . . (Yes) No N/A
Were field/trip blanks analyzed? . . . . . Yes No (N/A)
Are field/trip blank results acceptable? . . . . . Yes No (N/A)
Comments: Sample information was not provided. Field QC will be discussed in the summary report.

5. ACCURACY

Were spike samples analyzed at the required frequency? . . . . (Yes) No N/A
Are spike recoveries acceptable? . . . . . (Yes) No N/A
Were LCS analyses performed at the required frequency? . . . . (Yes) No N/A
Are LCS recoveries acceptable? . . . . . (Yes) No N/A
Comments: _____

6. PRECISION

Were laboratory duplicate samples analyzed at the required frequency? . . . . . (Yes) No N/A
Are laboratory duplicate sample RPD values acceptable? . . . . (Yes) No N/A
Are field duplicate RPD values acceptable? . . . . . Yes No (N/A)
Are field split RPD values acceptable? . . . . . Yes No (N/A)

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

Comments: Sample information was not provided. Field QC will be discussed in the summary report

7. ANALYTE QUANTITATION

Was analyte quantitation performed properly? . . . . . (Yes) No N/A

Comments:

8. REPORTED RESULTS AND DETECTION LIMITS

Are results reported for all requested analyses? . . . . . (Yes) No N/A

Are results supported in the raw data? . . . . . (Yes) No N/A

Are results calculated properly? . . . . . (Yes) No N/A

Do results meet the CRDLs? . . . . . (Yes) No N/A

Comments:

HOLDING TIME SUMMARY

PRE ~~SDG~~: 9401L205-WES-1478 | VALIDATOR: A. Stebbins | DATE: 3/3/94 | PAGE 1 OF 1

COMMENTS: Wet Chemistry

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09DT0	IC-SO_4,Cl,F	1/6/94	1/18/94	1/18/94	12	12	none
	CN		1/13/94	1/13/94	7	7	none
	NO_2/NO_3		1/26/94	1/26/94	20	20	none
	% solids		1/13/94	1/14/94	7	7	none

B-1

WHC-SD-EN-SPP-002, Rev. 2

METALS ANALYSIS DATA VALIDATION SUMMARY FOR DATA PACKAGE:
9401L205-WES-1478 (923-E418)

MEMORANDUM

APR 1994 RECEIVED TQO

TO: ~~200-UP-2 Project QA Record~~ April 12, 1994

FR: Sandra Schildt, Golder Associates Inc.

RE: METALS ANALYSIS DATA VALIDATION SUMMARY FOR DATA PACKAGE 9401L205-WES-1478 (923-E418)

INTRODUCTION

This memorandum presents the results of data validation on data package 9401L205-WES-1478 prepared by Roy F. Weston, Inc. (Weston). A list of the samples validated along with the analytes reported and the method of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09DT0	1/06/94	SOIL	SEE NOTE 1

Note 1: All samples were analyzed for CLP Target Analyte List (TAL) metals, cyanide, and titanium.

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 to this memo provide the following information:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

A non-conformance report and record of disposition accompanied the metals fraction and are included in Attachment 4. No qualification of data was made due to the non-conformance.

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met with the exception of the minor deficiencies identified below.

Accuracy. Goals for accuracy were met with the exception of the minor deficiencies identified below.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all analyses.

Completeness. The data package was complete for all requested analyses. One sample (1) was validated in this data set with a total of 25 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of the data as unusable.

MINOR DEFICIENCIES

The following is a summary of the minor deficiencies identified during validation which required qualification of data.

Laboratory Blanks

Positive Blanks. Antimony was detected at a positive concentration in the preparation blanks. Attachment 2 provides a summary of the samples and data qualification applied.

Laboratory Spikes

- Analytical spike recovery was unacceptable for arsenic. Attachment 2 and 5 provide a summary of the samples, data qualifications applied and supporting documentation.

Serial Dilution

- The percent difference (%D) of the ICP serial dilution was unacceptable for zinc. Attachment 2 provides a summary of the samples and data qualification applied.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993, Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF INORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected. The concentration reported is less than the contract required detection limit (CRDL) but greater then the instrument detection limit (IDL). The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample detection limit corrected for sample aliquot size, dilution factors and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and was not detected. Due to a minor quality control deficiency identified during data validation, the concentration reported may not accurately reflect the sample detection limit. The associated data have been qualified as estimated but should be considered usable for decision making purposes.

BJ - Indicates the constituent was analyzed for and detected at a concentration less than the CRDL but greater then the IDL. Due to a minor quality control deficiency identified during data validation, The associated data have been qualified as estimated, but should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

UR - Indicates the constituent was analyzed for and not detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

PKG ~~SDG:~~ 9401L205-WES-1478	VALIDATOR: L Schuldt	DATE: 3/31/94	PAGE 1 OF 1
COMMENTS: Inorganics			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Antimony	U	B09DT0	Analyte detected in blank
Zinc	J	B09DT0	%D > 10% in serial dilution
Arsenic	BJ	B09DT0	Analytical spike recovery > 115%

9401205.0781

-006

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: 9401L205-WES-1478

	Samp#	809DT0	
	Date	1-6-94	
	Location	---	
	Depth	---	
	Type	---	
	Comments	---	
Parameter	Units	Result	Q
ALUMINUM	MG/KG	4600.000	
ANTIMONY	MG/KG	5.000	U
ARSENIC	MG/KG	2.000	BJ
BARIUM	MG/KG	67.900	
BERYLLIUM	MG/KG	0.200	U
CADMIUM	MG/KG	0.810	U
CALCIUM	MG/KG	8020.000	
CHROMIUM	MG/KG	8.600	
COBALT	MG/KG	5.600	B
COPPER	MG/KG	9.200	
IRON	MG/KG	10500.000	
LEAD	MG/KG	3.000	
MAGNESIUM	MG/KG	3400.000	
MANGANESE	MG/KG	252.000	
MERCURY	MG/KG	0.050	U
NICKEL	MG/KG	7.200	B
POTASSIUM	MG/KG	1150.000	
SELENIUM	MG/KG	0.410	U
SILVER	MG/KG	1.020	U
SODIUM	MG/KG	84.500	B
THALLIUM	MG/KG	0.410	U
VANADIUM	MG/KG	21.000	
ZINC	MG/KG	28.300	J
CYANIDE	MG/KG	1.020	U
TITANIUM	MG/KG	612.000	

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

B09DT0

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP205

Matrix (soil/water): SOIL Lab Sample ID: 940120501

Level (low/med): LOW Date Received: 1/11/94

% Solids: 98.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4600.00			P	
7440-36-0	Antimony	5.00	B		P	U
7440-38-2	Arsenic	2.00	B	W	F	BJ
7440-39-3	Barium	67.90			P	
7440-41-7	Beryllium	.20	U		P	
7440-43-9	Cadmium	.81	U		P	
7440-70-2	Calcium	8020.00			P	
7440-47-3	Chromium	8.60			P	
7440-48-4	Cobalt	5.60	B		P	
7440-50-8	Copper	9.20			P	
7439-89-6	Iron	10500.00			P	
7439-92-1	Lead	3.00			F	
7439-95-4	Magnesium	3400.00			P	
7439-96-5	Manganese	252.00			P	
7439-97-6	Mercury	.05	U		CV	
7440-02-0	Nickel	7.20	B		P	
7440-09-7	Potassium	1150.00			P	
7782-49-2	Selenium	.41	U		F	
7440-22-4	Silver	1.02	U		P	
7440-23-5	Sodium	84.50	B		P	
7440-28-0	Thallium	.41	U		F	
7440-62-2	Vanadium	21.00			P	
7440-66-6	Zinc	28.30		E	P	J
	Cyanide	1.02	U		C	
	Titanium	6.12				

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN 03/90

Verified 3/3/94

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ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

Westinghouse Hanford Company

NONCONFORMANCE REPORT

1. Page 1 of 1

2. Preprinted No. 051940

QA Log No. EQA-94-007

3. P. O., W. O., or Job Control No.	4. System/End Use	5. Item/Material	6. Dwg../Spec./Other No.	7. Rev.
N/A	Field Investigation	Sample (Soil)	B09D59	N/A

8. Program/Project/Other	9. Safety Class	10. ASME Code Items
200-UP-1/2 SAF 93-263	N/A	☐ Yes ☒ No (If yes, notify authorized inspector)

11. Supplier Name/Address

Sampling and Mobile Labs

12. Notification of Potential Occurence Required ☐ Yes ☒ No

13. Code: Lot/Heat/Serial	14. Lot Size	15. Sample	16. Qty. Acc.	17. Inspection Criteria
N/A	1	1		☐ Dwg. ☐ Spec. ☐ Insp. Plan ☒ Other WHC-CM-7-7, ETS.1, Rev.5, sec.6.2, item 2 and WHC-CM-7-7, ETS.2, Rev.5, sec.5.3, item 12.

18. Item	19. Description of Nonconformance (list serial no. where applicable)	22. Disposition, Justification, and Instructions
1	As stated in WHC-CM-7-7, ETS.1, Rev.5, sec.6.2, item 2 subitem E, The Witness/Field Team Leader shall initiate the Chain of Custody form and shall enter sample identification numbers or other unique sample description. Also stated in WHC-CM-7-7, ETS.2, Rev.5, sec.5.2, item 2: Item 2: Prepare the Chain of Custody/Sample Analysis Request (BC-6000-928) or Sample Analysis Request (BC-6000-402) to accompany the samples to the analytical facility. Contrary to the above, the Chain of Custody was not initiated for the metals fraction for sample B09D59 that was sent to TMA.	Interim disposition is to review data from the metals analysis for this sample and the duplicate. The duplicate was sent to Weston (HEIS #B090T0). If metals results are less than detectable, the sample will be rejected through the NCR process and the NCR closed

20. Originator's Signature A. ERGH — Date 1/27/94

23. Design Document Change Required? ☐ Yes, Doc. No. _____ ☐ No

21. Cognizant QA Manager's Signature TL BENNINGTON — Date 2/1/94

24. Corrective Action Required? ☐ Yes, No. _____ ☐ No

Disp. Appr.

25. Cognizant Engineer	Date	26. Technical Rep.	Date	Signature/Org.	Date
MJ HANFORD	3/16/94				
QA Engineer	Date	Signature/Org.	Date	Signature/Org.	Date
TC TRIBLE	3/15/94				

Close

27. Accept _____ Reject _____ Follow on NCR _____ -011

QA/C Personnel Date

A-7310-104 (10/

HANFORD ANALYTICAL SERVICES MANAGEMENT

RECORD OF DISPOSITION

ROD-94-0012
Record of Disposition No.

DATE: January 18, 1994 | LABORATORY: Weston

PROJECT TITLE/NO.: 200-UP-1 | NCR NO.: N/A

SAMPLE IDENTIFICATION NUMBERS: B09DT0, B093H5, B093J4

DESCRIPTION OF EVENT:

a) Samples B09DS9 and B09DT0 were collected as field splits and targeted for shipment to TMA (primary) and Weston (split), respectively. During collection, the metals fraction (CLP TAL plus Ti) of sample B09DS9 was inadvertently omitted. A decision was made in the field to ship the metals fraction of sample B09DT0 to TMA to obtain a complete suite of analyses at the primary lab. This change was not reflected on the Weston Chain of Custody and Analytical Request form which indicated that a 500ml container was submitted for metals analysis. No metals fraction was received by Weston.

b) The Chain of Custody and Analytical Request form indicated that VOA fractions for samples B093H5 and B093J4 were shipped to Weston. Weston did not receive a VOA fraction for either of the two samples.

DISPOSITION OF SAMPLES:

Since sample B09DT0 was soil (chemically unpreserved), Weston was instructed to use remaining sample material from the other fractions to perform analysis for the requested metals (CLP; TAL plus Ti). VOA analysis for samples B093H5 and B093J4 was canceled.

APPROVAL SIGNATURES:

J. A. Lerch — 1/19/94
OSM Project Coordinator (Print/Sign Name) — Date

M. J. Galgoul — 1/28/94
Technical Representative (Print/Sign Name) — Date

N/A
Quality Assurance (Print/Sign Name) — Date

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client : WESTINGHOUSE HANFORD **W.O. #:** 06168-002-001-9999-00
RFW# : 9401L205 **Date Received:** 01-11-94

METALS

1. This narrative covers the analysis of one (1) soil sample.

2. The samples were prepared and analyzed in accordance with the following protocols: CLP SOW 3/90.

3. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory and High Purity.

4. All analyses were performed within the required holding times.

5. All Initial and Continuing Calibration Verifications (ICV/CCV's) were within control limits.

6. All Initial and Continuing Calibration Blanks (ICB/CCB's) were within control limits.

7. All Preparation/Method Blanks were below Reporting Limits.

8. All ICP Interference Check Samples (ICSA and ICSAB) were within control limits.

9. All Laboratory Control Samples (LCS) were within the 80-120% control limits.

10. All Serial Dilution percent differences were within USEPA SOW control limits except for:

RFW #	Element	%Difference
001	Zinc	15.5

11. All Matrix Spike recoveries were within the 75-125% control limits (exception allowed when sample concentration exceeds the spike added concentration by a factor of 4 or more).

Matrix spike analyses are not required for Al, Fe, Ca, Mg, Na, and K in soils.

WESTON

12. All Duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits for samples values greater than 5X Reporting Limit, or +/- the Reporting Limits for sample values less than 5X Reporting Limit.

13. Method of Standard Additions (MSA) analyses were not required.

14. The code CV is currently in use by the laboratory for both mercury instruments in operation (HG1 and HG2). HG1 is complete with autosampler and software, but still requires manual digestion; HG2 is operated by the analyst, produces a strip chart and also requires manual digestion.

15. HG1 requires less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionally scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 ml. For soils, 0.1 gram of sample is taken to a final volume of 50 ml (including all reagents).

16. ICP Interelement Correction Factors for IC3 are included in this package but do not appear on EDD.

17. The graphite furnace time that appears on form XIV is the time of the first injection. The time that appears on the data is the print time.

18. A discrepancy exists between raw data and Form XIVs analytical spikes recovery calculations performed for graphite furnace AA analytes. Instrument software calculates spike recoveries based on absolute values below the IDL for sample results. This is hard-coded by the vendor and is currently not correctable. CLP convention (SOW ILM02.0, Exhibit E, Section V, Item 6, page E-20) requires that when values fall below the IDL, the sample result is equal to zero (0) for the purposes of calculating the percent recovery. The Form XIVs contain the correct calculation.

3.1.94

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

Date

pas/m01-205.clp

9401205

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS, W.H. SETTER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 1-6-94

Ice Chest No.: EFS-11 — Field Logbook No.: EFL-1091

Bill of Lading/Airbill No.: NA — Offsite Property No.: ORSC 12596

Method of Shipment: OVERNIGHT AIR SERVICE

Shipped to: WESTON

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) RADIOACTIVE

Sample Identification: 9401L205-001

1) BOBBTO

1,500ml P:CLP;TAL Metals,Hg,Ti Did not Recd GAMMA
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

9401205-0715

2)

~~1,500ml P:CLP;TAL Metals,Hg,Ti~~
~~1,125ml Gs:VOA CLP~~
~~1,500ml aG:Semi-VOA CLP~~
~~1,250ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.1)~~
~~1,250ml G:Cyanide CLP~~
~~1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79~~

FER 1-10-94

3)

~~1,500ml P:CLP;TAL Metals,Hg,Ti~~
~~1,125ml Gs:VOA CLP~~
~~1,500ml aG:Semi-VOA CLP~~
~~1,250ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.1)~~
~~1,250ml G:Cyanide CLP~~
~~1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79~~

[ ] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.H. Setter 1115 1-6-94	Karen E. Boggs	1-6-94 1115
Karen E. Boggs 1-10-94 0715	W.H. Setter	1-10-94 0715
W.H. Setter		
FEDEX		1-11-94 9:30

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

0004

-015

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D 4/1/94	E
PROJECT: 200-UP-2			DATA PACKAGE: 9401L205-WES-1478		
VALIDATOR: L Schildt	LAB: Weston			DATE: 3/31/94	
CASE: West			SDG: N/A		

ANALYSES PERFORMED					
☑ CLP/ICP	☑ CLP/GFAA	☑ CLP/Hg	☑ CLP/Cyanide	☐	☐
☐ SW-846/ICP	☐ SW-846/GFAA	☐ SW-846/Hg	☐ SW-846 Cyanide	☐	☐

SAMPLES/MATRIX B09DTC / soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . (Yes) No N/A

Is a case narrative present? . . . . . (Yes) No N/A

Comments: _____

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments: _____

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

Were initial calibrations performed on all instruments? . . . . (Yes) No N/A
Are initial calibrations acceptable? . . . . . (Yes) No N/A
Are ICP interference checks acceptable? . . . . . (Yes) No N/A
Were ICV and CCV checks performed on all instruments? . . . . . (Yes) No N/A
Are ICV and CCV checks acceptable? . . . . . (Yes) No N/A
Comments:

4. BLANKS

Were ICB and CCB checks performed for all applicable analyses? (Yes) No N/A
Are ICB and CCB results acceptable? . . . . . (Yes) No N/A
Were preparation blanks analyzed? . . . . . (Yes) No N/A
Are preparation blank results acceptable? . . . . . Yes (No) N/A
Were field/trip blanks analyzed? . . . . . Yes No (N/A)
Are field/trip blank results acceptable? . . . . . Yes No (N/A)
Comments: Sample information was not provided. Field QC data will be reviewed in the summary report. Antimony detected in the prep blank

5. ACCURACY

Were spike samples analyzed? . . . . . (Yes) No N/A
Are spike sample recoveries acceptable? . . . . . (Yes) No N/A
Were laboratory control samples (LCS) analyzed? . . . . . (Yes) No N/A
Are LCS recoveries acceptable? . . . . . (Yes) No N/A
Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

6. PRECISION

Were laboratory duplicates analyzed? . . . . . (Yes) No N/A
Are laboratory duplicate samples RPD values acceptable? . . . . (Yes) No N/A
Were ICP serial dilution samples analyzed? . . . . . (Yes) No N/A
Are ICP serial dilution %D values acceptable? . . . . . Yes (No) N/A
Are field duplicate RPD values acceptable? . . . . . Yes No (N/A)
Are field split RPD values acceptable? . . . . . Yes No (N/A)
Comments: Sample information was not provided. Field QC data will be reviewed in the summary report. %D for zinc exceeded 10% unless sample result was > 50 × IDL.

7. FURNACE AA QUALITY CONTROL

Were duplicate injections performed as required? . . . . . (Yes) No N/A
Are duplicate injection %RSD values acceptable? . . . . . (Yes) No N/A
Were analytical spikes performed as required? . . . . . (Yes) No N/A
Are analytical spike recoveries acceptable? . . . . . Yes (No) N/A
Was MSA performed as required? . . . . . Yes No (N/A)
Are MSA results acceptable? . . . . . Yes No (N/A)
Comments: Recovery > 115% for Arsenic

8. REPORTED RESULTS AND DETECTION LIMITS

Are results reported for all requested analyses? . . . . . (Yes) No N/A
Are all results supported in the raw data? . . . . . (Yes) No N/A
Are results calculated properly? . . . . . (Yes) No N/A
Do results meet the CRDLs? . . . . . (Yes) No N/A
Comments:

HOLDING TIME SUMMARY

LRC SDG: 9401L205-WES-1478	VALIDATOR: A Schmidt	DATE: 3/3/94	PAGE 1 OF 1
COMMENTS: Inorganics			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09DT0	ICP	1/6/94	2/9/94	2/15/94	34	40	none
	ICP-Ti			2/17/94		42	
	GFAA-As			2/17/94			
	GFAA-Pb			2/17/94			
	GFAA-Se			2/17/94			
	GFAA-Tl		← 3/3/94	2/17/94	←		
	CV-Hg		2/23/94	2/3/94	28 ~~33~~ 3/3/94	28	
←	CN	←	1/12/94	1/13/94	6	7	←

BLANK AND SAMPLE DATA SUMMARY

SDG: 94011205-WES-1478	VALIDATOR: A. Schlicht	DATE: 3/31/94	PAGE ____ OF ____

COMMENTS: Inorganics

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
PBLK	Antimony	5.5	B		mg/kg	27.5		B09DTC	SU

PRECISION DATA SUMMARY

PRG 9401L205 - ~~SDG:~~ WES-1478	VALIDATOR: A. Schlabach	DATE: 3/3/94	PAGE 1 OF 1
COMMENTS: ICP Serial Dilution			

COMPOUND	SAMPLE ID: B09DTC	SAMPLE ID: B09DTCL	~~RPD~~ %D	SAMPLES AFFECTED	QUALIFIER
Zinc	139	160.5	15.5	B09DTC	J

ACCURACY DATA SUMMARY

SDG: 9401L205-WES-1473	VALIDATOR: S Hollibaugh	DATE: 3/31/94	PAGE ____ OF ____	
COMMENTS: GFAA Analytical Spike				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
1309DTO	Arsenic	151	B09DTO	BJ

U.S. EPA - CLP

3
BLANKS

Lab name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab code: WESTON Case No.: WEST SAS No.: SDG No.: CLP205

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	27.0	U	27.0	U	-55.0	B	27.0	U	5.400	U	P
Antimony	19.0	U	23.4	B	19.0	U	19.0	U	5.500	B	P
Arsenic	2.0	U	2.0	U	-2.2	B			.400	U	F
Barium	6.0	U	6.0	U	6.0	U	6.0	U	1.200	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	.200	U	P
Cadmium	4.0	U	4.0	U	4.0	U	4.0	U	.800	U	P
Calcium	20.0	U	20.0	U	20.0	U	20.0	U	4.000	U	P
Chromium	5.0	U	5.0	U	5.0	U	5.0	U	1.300	B	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Copper	7.0	U	7.0	U	7.0	U	7.0	U	1.400	U	P
Iron	7.0	U	7.0	U	7.0	U	7.0	U	1.400	U	P
Lead	2.0	U	2.0	U	2.0	U	-2.9	B	.400	U	F
Magnesium	-30.0	B	29.0	U	29.0	U	29.0	U	5.800	U	P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	.200	U	P
Mercury	.1	U	.1	U	.1	U	.1	U	.050	U	CV
Nickel	9.0	U	9.0	U	9.0	U	9.0	U	1.800	U	P
Potassium	938.0	U	938.0	U	938.0	U	938.0	U	197.600	B	P
Selenium	2.0	U	2.0	U	2.0	U	2.0	U	.400	U	F
Silver	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Sodium	48.0	U	50.3	B	48.0	U	48.0	U	12.200	B	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	.400	U	F
Vanadium	4.0	U	4.0	U	4.0	U	4.0	U	.960	B	P
Zinc	2.0	U	2.0	U	2.0	U	2.0	U	.920	B	P
Cyanide	10.0	U	10.0	U	10.0	U	10.0	U	1.000	U	C

FORM III - IN 03/90

3/31/94 0027

024

U.S. EPA - CLP

9

ICP SERIAL DILUTIONS

EPA SAMPLE NO.

B09DT0L

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP205

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	22599.10		22140.51		2.0		P
Antimony	24.40	B	254.00	B	941.0		P
Arsenic							
Barium	333.20		325.00	B	2.5		P
Beryllium	1.00	B	5.00	U	100.0		P
Cadmium	4.00	U	21.50	B	100.0		P
Calcium	39374.30		38888.01		1.2		P
Chromium	42.10		68.00		61.5		P
Cobalt	27.60	B	51.50	B	86.6		P
Copper	45.10		76.50	B	69.6		P
Iron	51473.50		52501.99		2.0		P
Lead							
Magnesium	16685.80		16656.50	B	.2		P
Manganese	1238.00		1209.50		2.3		P
Mercury							
Nickel	35.20	B	47.50	B	34.9		P
Potassium	5622.90		10402.50	B	85.0		P
Selenium							
Silver	5.00	U	42.50	B	100.0		P
Sodium	415.00	B	1097.50	B	164.5		P
Thallium							
Vanadium	103.10		124.50	B	20.8		P
Zinc	139.00		160.50		15.5	E	P

FORM IX - IN

03/90

3/31/94

SEMIVOLATILES DATA VALIDATION SUMMARY FOR DATA PACKAGE:
9401L205-WES-1478 (923-E418)

MEMORANDUM

TO: 200-UP-2 Project QA Record April 12, 1994

FR: Sandra Schildt, Golder Associates Inc.

RE: SEMIVOLATILES DATA VALIDATION SUMMARY FOR DATA PACKAGE 9401L205-WES-1478 (923-E418)

INTRODUCTION

This memorandum presents the results of data validation on data package 9401L205-WES-1478 prepared by Roy F. Weston, Inc. (Weston). A list of the samples validated along with the analytes reported and the method of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09DT0	1/06/93	SOIL	SEE NOTE 1

Note 1: The samples were analyzed for CLP semivolatile target compound list (TCL) organics.

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 to this memo provide the following information:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. One sample (1) was validated in this data set with a total of 64 determinations reported, all of which were deemed valid. This results in a completeness of 100% which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following is a summary of the minor deficiencies identified during validation which required qualification of data.

Laboratory Blanks

- Di-n-butylphthalate and bis(2-ethylhexyl)phthalate were detected in the method blank. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied, and supporting documentation.

TENTATIVELY IDENTIFIED COMPOUND EVALUATION

Tentatively identified compounds (TICs) reported by the laboratory were evaluated during validation and qualified as follows:

- TICs were detected in the sample and identified as common laboratory contaminants, resulting in qualification of the results as unusable (R) as shown in Attachment 3.

- TICs were detected in the sample and determined to be valid, resulting in qualification of the results as presumptive and valid (JN).

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993, Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

UJN- Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected due to associated blank contamination.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

PKG ~~SDG~~: 9401L205-WES-1427	VALIDATOR: A. Schmidt	DATE: 4/6/94	PAGE 1 OF 1
COMMENTS: Semivolatile			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Di-N-Butylphthalate	U	B09DT0	Compound detected in blank
Bis(2-ethylhexyl)phthalate	U	B09DT0	

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: 9401L205-WES-1478

Parameter	Units	Samp# B09DT0	Q
		Date 1-6-94	
		Location ---	
		Depth ---	
		Type ---	
		Comments ---	
PHENOL	UG/KG	340.000	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	340.000	U
2-CHLOROPHENOL	UG/KG	340.000	U
1,3-DICHLOROBENZENE	UG/KG	340.000	U
1,4-DICHLOROBENZENE	UG/KG	340.000	U
1,2-DICHLOROBENZENE	UG/KG	340.000	U
2-METHYLPHENOL	UG/KG	340.000	U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	340.000	U
4-METHYLPHENOL	UG/KG	340.000	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	340.000	U
HEXACHLOROETHANE	UG/KG	340.000	U
NITROBENZENE	UG/KG	340.000	U
ISOPHORONE	UG/KG	340.000	U
2-NITROPHENOL	UG/KG	340.000	U
2,4-DIMETHYLPHENOL	UG/KG	340.000	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	340.000	U
2,4-DICHLOROPHENOL	UG/KG	340.000	U
1,2,4-TRICHLOROBENZENE	UG/KG	340.000	U
NAPHTHALENE	UG/KG	340.000	U
4-CHLOROANILINE	UG/KG	340.000	U
HEXACHLOROBUTADIENE	UG/KG	340.000	U
4-CHLORO-3-METHYLPHENOL	UG/KG	340.000	U
2-METHYLNAPHTHALENE	UG/KG	340.000	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	340.000	U
2,4,6-TRICHLOROPHENOL	UG/KG	340.000	U
2,4,5-TRICHLOROPHENOL	UG/KG	840.000	U
2-CHLORONAPHTHALENE	UG/KG	340.000	U
2-NITROANILINE	UG/KG	840.000	U
DIMETHYLPHTHALATE	UG/KG	340.000	U
ACENAPHTHYLENE	UG/KG	340.000	U
3-NITROANILINE	UG/KG	840.000	U
ACENAPHTHENE	UG/KG	340.000	U

Validated Data Summary, Data Package: 9401L205-WES-1478

	Samp#	B09DT0	
	Date	1-6-94	
	Location	---	
	Depth	---	
	Type	---	
	Comments	---	
Parameter	Units	Result	Q
2,4-DINITROPHENOL	UG/KG	840.000	U
4-NITROPHENOL	UG/KG	840.000	U
DIBENZOFURAN	UG/KG	340.000	U
2,4-DINITROTOLUENE	UG/KG	340.000	U
2,6-DINITROTOLUENE	UG/KG	340.000	U
DIETHYLPHTHALATE	UG/KG	340.000	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	340.000	U
FLUORENE	UG/KG	340.000	U
4-NITROANILINE	UG/KG	840.000	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	840.000	U
N-NITROSODIPHENYLAMINE	UG/KG	340.000	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	340.000	U
HEXACHLOROBENZENE	UG/KG	340.000	U
PENTACHLOROPHENOL	UG/KG	840.000	U
PHENANTHRENE	UG/KG	340.000	U
ANTHRACENE	UG/KG	340.000	U
CARBAZOLE	UG/KG	340.000	U
DI-N-BUTYLPHTHALATE	UG/KG	340.000	U
FLUORANTHENE	UG/KG	340.000	U
PYRENE	UG/KG	340.000	U
BUTYLBENZYLPHTHALATE	UG/KG	340.000	U
3,3'-DICHLOROBENZIDINE	UG/KG	340.000	U
BENZO(A)ANTHRACENE	UG/KG	340.000	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	340.000	U
CHRYSENE	UG/KG	340.000	U
DI-N-OCTYLPHTHALATE	UG/KG	340.000	U
BENZO(B)FLUORANTHENE	UG/KG	340.000	U
BENZO(K)FLUORANTHENE	UG/KG	340.000	U
BENZO(A)PYRENE	UG/KG	340.000	U
INDENO(1,2,3-CD)PYRENE	UG/KG	340.000	U
DIBENZ(A,H)ANTHRACENE	UG/KG	340.000	U
BENZO(G,H,I)PERYLENE	UG/KG	340.000	U

600

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B09DT0

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 9401L205-001

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: L012408

Level: (low/med) LOW

Date Received: 01/11/94

% Moisture: 2 decanted: (Y/N)

Date Extracted: 01/13/94

Concentrated Extract Volume: 500(uL)

Date Analyzed: 01/24/94

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	840	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	840	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	840	U
83-32-9	Acenaphthene	340	U

0032

4/11/94

-010

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B09DT0

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 9401L205-001

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: L012408

Level: (low/med) LOW

Date Received: 01/11/94

% Moisture: 2 decanted: (Y/N)

Date Extracted: 01/13/94

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 01/24/94

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q	
51-28-5	2,4-Dinitrophenol	840	U	
100-02-7	4-Nitrophenol	840	U	
132-64-9	Dibenzofuran	340	U	
121-14-2	2,4-Dinitrotoluene	340	U	
84-66-2	Diethylphthalate	340	U	
7005-72-3	4-Chlorophenyl-phenylether	340	U	
86-73-7	Fluorene	340	U	
100-01-6	4-Nitroaniline	840	U	
534-52-1	4,6-Dinitro-2-methylphenol	840	U	
86-30-6	N-Nitrosodiphenylamine (1)	340	U	
101-55-3	4-Bromophenyl-phenylether	340	U	
118-74-1	Hexachlorobenzene	340	U	
87-86-5	Pentachlorophenol	840	U	
85-01-8	Phenanthrene	340	U	
120-12-7	Anthracene	340	U	
86-74-8	Carbazole	340	U	
84-74-2	Di-n-butylphthalate	340 ~~320~~	~~JB~~	U
206-44-0	Fluoranthene	340	U	
129-00-0	Pyrene	340	U	
85-68-7	Butylbenzylphthalate	340	U	
91-94-1	3,3'-Dichlorobenzidine	340	U	
56-55-3	Benzo(a)anthracene	340	U	
218-01-9	Chrysene	340	U	
117-81-7	bis(2-Ethylhexyl)phthalate	340 ~~22~~	~~J~~	U
117-84-0	Di-n-octyl phthalate	340	U	
205-99-2	Benzo(b)fluoranthene	340	U	
207-08-9	Benzo(k)fluoranthene	340	U	
50-32-8	Benzo(a)pyrene	340	U	
193-39-5	Indeno(1,2,3-cd)pyrene	340	U	
53-70-3	Dibenz(a,h)anthracene	340	U	
191-24-2	Benzo(g,h,i)perylene	340	U	

(1) - Cannot be separated from Diphenylamine

4/11/94

~~0033~~

U011

1F

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09DT0

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 9401L205-001

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: L012408

Level: (low/med) LOW

Date Received: 01/11/94

% Moisture: 2 decanted: (Y/N)

Date Extracted: 01/13/94

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 01/24/94

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y

pH: 6.8

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		UNKNOWN	6.00	70	~~J~~	JN
2.		ALDOL CONDENSATE	6.30	100	~~JA~~	R
3.		ALDOL CONDENSATE	7.37	200	~~JA~~	R
4.		ORGANIC ACID	16.13	200	~~J~~	JN
5.		PHOSPHATE	23.68	400	~~J~~	JN
6.		UNKNOWN	26.75	100	~~J~~	JN

9401225.0766

4/11/94

~~0034~~ 012

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9401L205

W.O. #: 06168-002-001-9999-00
Date Received: 01-11-94

SEMIVOLATILE

One (1) soil sample was collected on 01-06-94.

The sample and its associated QC samples were extracted on 01-13-94, 02-14-94 and analyzed according to criteria set forth in CLP SOW 3/90 for TCL Semivolatile target compounds on 01-24-94, 02-15-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Non-target compounds were detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. All matrix spike recoveries were within EPA QC limits.

   A matrix spike and a matrix spike duplicate for sample B09DT0 were extracted, in hold in batch 94LE0070; however there were several low recoveries in the matrix spike and consequently several RPD limits were exceeded. The MS and MSD were re-extracted out of hold and only the second set of spikes were reported; the first set of MS/MSD data is available upon client request.

4. All blank spike recoveries were within EPA QC limits.

5. The laboratory blank 94LE0070-MB1 contained the common contaminant Di-n-butylphthalate at a level less than the CRQL. The laboratory blank 94LE0305-MB1 contained the common contaminants Di-n-butylphthalate at a level less than 4x the CRQL, Butylbenzylphthalate at a level less than 3x the CRQL, and Bis(2-ethylhexyl)phthalate at a level less than the CRQL.

6. All internal standard area and retention time criteria were met.

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

03.01 94.
Date

/dlc/bna/01-205b.cn

4/1/94

014

9401120?

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator L E ROGERS, W.U. SETZER

Company Contact L E ROGERS

Telephone 376-7690

Project Designation/Sampling Locations 200-UP-2

Collection Date 1.6.94

Ice Chest No. EFS-11

Field Logbook No. EFL-1091

Bill of Lading/Airbill No. NA

Offsite Property No. OTSC 17596

Method of Shipment OVERNIGHT AIR SERVICE

Shipped to WESTON

Possible Sample Hazards/Remarks Keep samples at 4C (SOIL) RADIOACTIVE

Sample Identification 94011-205-001

1) B09DT0

1,500ml P:CLP;TAL Metals,Hg,Ti Did not rec'd 06-11-94
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

2)

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

LER 1-10-94

3)

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

[ ] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer 1115 1.6.94	Loren E. Rogers	1-6-94 1115
Loren E. Rogers 1-10-94 LER 0715	W.U. Setzer	1-10-94 0715
W.U. Setzer		
FEDEX	[signature]	1-11-94 9:30

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

4/11/94

~~0013~~
015

9413225.0769

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
				4/11/94	

PROJECT: 200-UP-2	DATA PACKAGE: 9401L205-WES-1478	
VALIDATOR: J Schlobolt	LAB: Weston	DATE: 4/4/94
CASE: NA	SDG: NA	

ANALYSES PERFORMED

☐ CLP Volatiles	☐ SW-846 8240 (cap column)	☐ SW-846 8260 (packed column)	☑ CLP Semivolatiles	☐ SW-846 8270 (cap column)	☐ SW-846 (packed column)
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX B09DT0 / soil

9401225.077

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . (Yes) No N/A

Is a case narrative present? . . . . . (Yes) No N/A

Comments: _____

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments: _____

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. INSTRUMENT TUNING AND CALIBRATION

Is the GC/MS tuning/performance check acceptable? . . . . . (Yes) No N/A

Are initial calibrations acceptable? . . . . . (Yes) No N/A

Are continuing calibrations acceptable? . . . . . (Yes) No N/A

Comments: _____

4. BLANKS

Were laboratory blanks analyzed? . . . . . (Yes) No N/A

Are laboratory blank results acceptable? . . . . . Yes (No) N/A

Were field/trip blanks analyzed? . . . . . Yes No (N/A)

Are field/trip blank results acceptable? . . . . . Yes No (N/A)

Comments: Di-n-butylphthalate detected in blank. Qualification is summarized in attachment 2. Sample information not available, field QC results will be evaluated in the summary report. BEHP was detected on quantitation report but not reported on SBLK report form. Concentration within 10× sample blank value. 4/11/94

5. ACCURACY

Were surrogates/System Monitoring Compounds analyzed? . . . . . (Yes) No N/A

Are surrogate/System Monitoring Compound recoveries acceptable? (Yes) No N/A

Were MS/MSD samples analyzed? . . . . . (Yes) No N/A

Are MS/MSD results acceptable? . . . . . (Yes) No N/A

Comments: The initial MS/MSD recoveries were low, therefore the MS/MSD samples were reextracted and reran outside of the holding time with acceptable recoveries. No qualification required

GC/MS ORGANIC DATA VALIDATION CHECKLIST

6. PRECISION

Are MS/MSD RPD values acceptable? . . . . . (Yes) No N/A
Are field duplicate RPD values acceptable? . . . . . Yes No (N/A)
Are field split RPD values acceptable? . . . . . Yes No (N/A)
Comments: Sample information unavailable. field QC results will be valuated in the summary report.

7. SYSTEM PERFORMANCE

Were internal standards analyzed? . . . . . (Yes) No N/A
Are internal standard areas acceptable? . . . . . (Yes) No N/A
Are internal standard retention times acceptable? . . . . . (Yes) No N/A
Comments:

8. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . (Yes) No N/A
Is compound quantitation acceptable? . . . . . (Yes) No N/A
Comments:

9. REPORTED RESULTS AND QUANTITATION LIMITS

Are results reported for all requested analyses? . . . . . (Yes) No N/A
Are all results supported in the raw data? . . . . . (Yes) No N/A
Do results meet the CRQLs? . . . . . (Yes) No N/A
Has the laboratory properly identified and coded all TIC? . . (Yes) No N/A
Comments:

HOLDING TIME SUMMARY

PRJ SDG: 9401L205-WES-1478	VALIDATOR: L. Schilde	DATE: 4/4/94	PAGE 1 OF 1
COMMENTS: Semivolatile			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09DT0	~~BNA~~ SVOA 3/14/94	1/6/94	1/13/94	1/24/94	7	11 from extract	none

BLANK AND SAMPLE DATA SUMMARY

PKG SDG: 9401L205-WES-1478	VALIDATOR: A. Schiblat	DATE: 4/4/94	PAGE 1 OF 1
COMMENTS: Semivolatiles			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
SB1K	Di-n-butylphthalate	50	J		ug/kg		500	B09DT0	~~320~~ U
SB1K	Bis(2-ethylhexyl)phthalate	3.5			ug/kg		35	B09DT0	~~22~~ U
									5/4/94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SBLK

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 94LE0070-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: L012406

Level: (low/med) LOW

Date Received: 01/13/94

% Moisture: _____ decanted: (Y/N) __

Date Extracted: 01/13/94

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 01/24/94

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.0

94-0275.0776

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	840	U
100-02-7	4-Nitrophenol	840	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	840	U
534-52-1	4,6-Dinitro-2-methylphenol	840	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	840	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	50	J
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octyl phthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

4/12/94

0165

022

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot
58	NOT FOUND								
59	NOT FOUND								
60	NOT FOUND								
61	NOT FOUND								
62	NOT FOUND								
63	NOT FOUND								
64	NOT FOUND								
65	NOT FOUND								
66	NOT FOUND								
67	NOT FOUND								
68	NOT FOUND								
69	NOT FOUND								
70	149	1208	20:08	4	1.070	A BB	9001.	3.001 NG	0.28 ✓
71	NOT FOUND								
72	NOT FOUND								
73	NOT FOUND								
74	NOT FOUND								
75	NOT FOUND								
76	NOT FOUND								
77	149	1467	24:27	5	0.993	A BB	249.	0.210 NG	0.02 BE HP
78	NOT FOUND								
79	NOT FOUND								
80	NOT FOUND								
81	NOT FOUND								
82	NOT FOUND								
83	NOT FOUND								
84	NOT FOUND								
85	NOT FOUND								
86	NOT FOUND								

QA/QC 0772

spectra/LIMS - 1602/16/94

SBK

VR 1/26/94

4/1/94

0772

-023

SEMIVOLATILES DATA VALIDATION SUMMARY FOR DATA PACKAGE:
9401L205-WES-1478 (923-E418)

MEMORANDUM

TO: 200-UP-2 Project QA Record April 23, 1994

FR: Sandra Schildt, Golder Associates Inc. for

RE: SEMIVOLATILES DATA VALIDATION SUMMARY FOR DATA PACKAGE 9401L205-WES-1478 (923-E418)

INTRODUCTION

This memorandum presents the results of data validation on data package 9401L205-WES-1478 prepared by Roy F. Weston, Inc. (Weston). A list of the samples validated along with the analytes reported and the method of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09DT0	1/06/94	SOIL	SEE NOTE 1

Note 1: The samples were analyzed for CLP semivolatile target compound list (TCL) organics.

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 to this memo provide the following information:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Revised 4-25-94

001

~~002~~

Completeness. The data package was complete for all requested analyses. One sample (1) was validated in this data set with a total of 64 determinations reported, all of which were deemed valid. This results in a completeness of 100% which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following is a summary of the minor deficiencies identified during validation which required qualification of data.

Laboratory Blanks

- Di-n-butylphthalate and bis(2-ethylhexyl)phthalate were detected in the method blank. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied, and supporting documentation.

TENTATIVELY IDENTIFIED COMPOUND EVALUATION

Tentatively identified compounds (TICs) reported by the laboratory were evaluated during validation and qualified as follows:

- TICs were detected in the sample and identified as common laboratory contaminants, resulting in qualification of the results as unusable (R) as shown in Attachment 3.

- TICs were detected in the sample and determined to be valid, resulting in qualification of the results as presumptive and valid (JN).

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993, Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

UJN- Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected due to associated blank contamination.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

PKG ~~SDG~~: 9401L205-WES-1477	VALIDATOR: A. Schuldt	DATE: 4/6/94	PAGE 1 OF 1
COMMENTS: Semivolatile			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Di-N-Butylphthalate	U	B09DT0	Compound detected in blank
Bis(2-ethylhexyl)phthalate	U	B09KT0	

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: 9401L205-MES-1478

Parameter	Units	Samp# B090T0	Q
Date		1-6-94	
Location		---	
Depth		---	
Type		---	
Comments		---	
PHENOL	UG/KG	340.000	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	340.000	U
2-CHLOROPHENOL	UG/KG	340.000	U
1,3-DICHLOROBENZENE	UG/KG	340.000	U
1,4-DICHLOROBENZENE	UG/KG	340.000	U
1,2-DICHLOROBENZENE	UG/KG	340.000	U
2-METHYLPHENOL	UG/KG	340.000	U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	340.000	U
4-METHYLPHENOL	UG/KG	340.000	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	340.000	U
HEXACHLOROETHANE	UG/KG	340.000	U
NITROBENZENE	UG/KG	340.000	U
ISOPHORONE	UG/KG	340.000	U
2-NITROPHENOL	UG/KG	340.000	U
2,4-DIMETHYLPHENOL	UG/KG	340.000	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	340.000	U
2,4-DICHLOROPHENOL	UG/KG	340.000	U
1,2,4-TRICHLOROBENZENE	UG/KG	340.000	U
NAPHTHALENE	UG/KG	340.000	U
4-CHLOROANILINE	UG/KG	340.000	U
HEXACHLOROBUTADIENE	UG/KG	340.000	U
4-CHLORO-3-METHYLPHENOL	UG/KG	340.000	U
2-METHYLNAPHTHALENE	UG/KG	340.000	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	340.000	U
2,4,6-TRICHLOROPHENOL	UG/KG	340.000	U
2,4,5-TRICHLOROPHENOL	UG/KG	840.000	U
2-CHLORONAPHTHALENE	UG/KG	340.000	U
2-NITROANILINE	UG/KG	840.000	U
DIMETHYLPHTHALATE	UG/KG	340.000	U
ACENAPHTHYLENE	UG/KG	340.000	U
3-NITROANILINE	UG/KG	840.000	U
ACENAPHTHENE	UG/KG	340.000	U

Validated Data Summary, Data Package: 9401L205-WES-1478

Parameter	Units	Samp# B09DT0 Date 1-6-94 Location --- Depth --- Type --- Comments --- Result	Q
2,4-DINITROPHENOL	UG/KG	840.000	U
4-NITROPHENOL	UG/KG	840.000	U
DIBENZOFURAN	UG/KG	340.000	U
2,4-DINITROTOLUENE	UG/KG	340.000	U
2,6-DINITROTOLUENE	UG/KG	340.000	U
DIETHYLPHTHALATE	UG/KG	340.000	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	340.000	U
FLUORENE	UG/KG	340.000	U
4-NITROANILINE	UG/KG	840.000	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	840.000	U
N-NITROSODIPHENYLAMINE	UG/KG	340.000	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	340.000	U
HEXACHLOROBENZENE	UG/KG	340.000	U
PENTACHLOROPHENOL	UG/KG	840.000	U
PHENANTHRENE	UG/KG	340.000	U
ANTHRACENE	UG/KG	340.000	U
CARBAZOLE	UG/KG	340.000	U
DI-N-BUTYLPHTHALATE	UG/KG	340.000	U
FLUORANTHENE	UG/KG	340.000	U
PYRENE	UG/KG	340.000	U
BUTYLBENZYLPHTHALATE	UG/KG	340.000	U
3,3'-DICHLOROBENZIDINE	UG/KG	340.000	U
BENZO(A)ANTHRACENE	UG/KG	340.000	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	340.000	U
CHRYSENE	UG/KG	340.000	U
DI-N-OCTYLPHTHALATE	UG/KG	340.000	U
BENZO(B)FLUORANTHENE	UG/KG	340.000	U
BENZO(K)FLUORANTHENE	UG/KG	340.000	U
BENZO(A)PYRENE	UG/KG	340.000	U
INDENO(1,2,3-CD)PYRENE	UG/KG	340.000	U
DIBENZ(A,H)ANTHRACENE	UG/KG	340.000	U
BENZO(G,H,I)PERYLENE	UG/KG	340.000	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B09DT0

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 9401L205-001

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: L012408

Level: (low/med) LOW

Date Received: 01/11/94

% Moisture: 2 decanted: (Y/N)

Date Extracted: 01/13/94

Concentrated Extract Volume: 500(uL)

Date Analyzed: 01/24/94

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.8

9401205.0789

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	840	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	840	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	840	U
83-32-9	Acenaphthene	340	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B09DT0

Lab Name: Rov F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 9401L205-001

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: L012408

Level: (low/med) LOW

Date Received: 01/11/94

% Moisture: 2 decanted: (Y/N)

Date Extracted: 01/13/94

Concentrated Extract Volume: 500(uL)

Date Analyzed: 01/24/94

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	840	U
100-02-7	4-Nitrophenol	840	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	840	U
534-52-1	4,6-Dinitro-2-methylphenol	840	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	840	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-butylphthalate	340 ~~320~~ ~~JB~~	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	~~340~~ ~~22~~ ~~JB~~	U
117-84-0	Di-n-octyl phthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenz(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B09DT0

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 9401L205-001

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: L012408

Level: (low/med) LOW

Date Received: 01/11/94

% Moisture: 2 decanted: (Y/N)

Date Extracted: 01/13/94

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 01/24/94

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.8

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		UNKNOWN	6.00	70	~~J~~	JN
2.		ALDOL CONDENSATE	6.30	100	JA	R
3.		ALDOL CONDENSATE	7.37	200	~~JA~~	R
4.		ORGANIC ACID	16.13	200	~~J~~	JN
5.		PHOSPHATE	23.68	400	~~J~~	JN
6.		UNKNOWN	26.75	100	~~J~~	JN

FORM 1 SV-TIC 3/90

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9401L205

W.O. #: 06168-002-001-9999-00
Date Received: 01-11-94

SEMIVOLATILE

One (1) soil sample was collected on 01-06-94.

The sample and its associated QC samples were extracted on 01-13-94, 02-14-94 and analyzed according to criteria set forth in CLP SOW 3/9O for TCL Semivolatile target compounds on 01-24-94, 02-15-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Non-target compounds were detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. All matrix spike recoveries were within EPA QC limits.

   A matrix spike and a matrix spike duplicate for sample B09DT0 were extracted, in hold in batch 94LE0070; however there were several low recoveries in the matrix spike and consequently several RPD limits were exceeded. The MS and MSD were re-extracted out of hold and only the second set of spikes were reported; the first set of MS/MSD data is available upon client request.

4. All blank spike recoveries were within EPA QC limits.

5. The laboratory blank 94LE0070-MB1 contained the common contaminant Di-n-butylphthalate at a level less than the CRQL. The laboratory blank 94LE0305-MB1 contained the common contaminants Di-n-butylphthalate at a level less than 4x the CRQL, Butylbenzylphthalate at a level less than 3x the CRQL, and Bis(2-ethylhexyl)phthalate at a level less than the CRQL.

6. All internal standard area and retention time criteria were met.

Kenneth Brownlee — 03.01 94.

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

Date

/dlc/bna/01-205b.cn

9401205

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS, W.V. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 1-6-94

Ice Chest No.: EFS-11 — Field Logbook No.: EFL-1091

Bill of Lading/Airbill No.: N/A — Offsite Property No.: OFSC 17596

Method of Shipment: OVERNIGHT AIR SERVICE

Shipped to: WESTON

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) RADIOACTIVE

Sample Identification: 9401L205-001

1) BOGDTO

1,500ml P:CLP;TAL Metals,Hg,Ti Did not recvd 6A 1-4-94
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

9401205-0793

2)

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

LER 1-10-94

3)

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

[ ] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: W.V. Setzer 1115 1-6-94	Received by: Laura E. Rogers	Date/Time: 1-6-94 1115
Relinquished by: Laura E. Rogers 1-10-94 0715	Received by: W.V. Setzer	Date/Time: 1-10-94 0715
Relinquished by: W.V. Setzer	Received by:	Date/Time:
Relinquished by: FEDEX	Received by:	Date/Time: 1-11-94 9130

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

1/11/94

0013

015

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-UP-2			DATA PACKAGE: 9401L205-WES-1478		
VALIDATOR: J Schlicht	LAB: Weston		DATE: 4/4/94		
CASE: NA			SDG: NA		

ANALYSES PERFORMED					
☐ CLP Volatiles	☐ SW-846 8240 (cap column)	☐ SW-846 8260 (packed column)	☑ CLP Semivolatiles	☐ SW-846 8270 (cap column)	☐ SW-846 (packed column)
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX B09DTQ / soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . (Yes) No N/A

Is a case narrative present? . . . . . (Yes) No N/A

Comments: _____

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments: _____

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. INSTRUMENT TUNING AND CALIBRATION

Is the GC/MS tuning/performance check acceptable? . . . . . (Yes) No N/A
Are initial calibrations acceptable? . . . . . (Yes) No N/A
Are continuing calibrations acceptable? . . . . . (Yes) No N/A
Comments: _____

4. BLANKS

Were laboratory blanks analyzed? . . . . . (Yes) No N/A
Are laboratory blank results acceptable? . . . . . Yes (No) N/A
Were field/trip blanks analyzed? . . . . . Yes No (N/A)
Are field/trip blank results acceptable? . . . . . Yes No ~~N/A~~
Comments: Di-n-butylphthalate detected in blank. Qualification is summarized in attachment 2. Sample information not available, field QC results will be evaluated in the summary report. BEHP was detected on quantitation report but not reported on SBLK report form. Low concentration within 10× sample value. Validator 4/11/94

5. ACCURACY

Were surrogates/System Monitoring Compounds analyzed? . . . . . (Yes) No N/A
Are surrogate/System Monitoring Compound recoveries acceptable? (Yes) No N/A
Were MS/MSD samples analyzed? . . . . . (Yes) No N/A
Are MS/MSD results acceptable? . . . . . (Yes) No N/A
Comments: The initial MS/MSD recoveries were low, therefore the MS/MSD samples were reextracted and reran outside of the holding time with acceptable recoveries. No qualification required.

GC/MS ORGANIC DATA VALIDATION CHECKLIST

6. PRECISION

Are MS/MSD RPD values acceptable? . . . . . (Yes) No N/A
Are field duplicate RPD values acceptable? . . . . . Yes No (N/A)
Are field split RPD values acceptable? . . . . . Yes No (N/A)
Comments: Sample information unavailable. Field QC results will be evaluated in the summary report.

7. SYSTEM PERFORMANCE

Were internal standards analyzed? . . . . . (Yes) No N/A
Are internal standard areas acceptable? . . . . . (Yes) No N/A
Are internal standard retention times acceptable? . . . . . (Yes) No N/A
Comments:

8. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . (Yes) No N/A
Is compound quantitation acceptable? . . . . . (Yes) No N/A
Comments:

9. REPORTED RESULTS AND QUANTITATION LIMITS

Are results reported for all requested analyses? . . . . . (Yes) No N/A
Are all results supported in the raw data? . . . . . (Yes) No N/A
Do results meet the CRQLs? . . . . . (Yes) No N/A
Has the laboratory properly identified and coded all TIC? . . (Yes) No N/A
Comments:

HOLDING TIME SUMMARY

PR# SDG: 9401L205-WES-1478	VALIDATOR: L. Schilde	DATE: 4/4/94	PAGE 1 OF 1
COMMENTS: Semivolatile			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09DTC	BNA SVOA 3/14/94	1/6/94	1/13/94	1/24/94	7	11 from extract	none

BLANK AND SAMPLE DATA SUMMARY

~~PKG~~ SDG: 9401L205-WES-1478	VALIDATOR: S Stahlstt	DATE: 4/4/94	PAGE 1 OF 1
COMMENTS: Semivolatiles			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
SB1K	Di-n-butylphthalate	50	J		ug/kg		500	B09DT0	~~320~~ U
SB1K	Bis(2-ethylhexyl)phthalate	3.5			ug/kg		35	B09DT0	~~22~~ U
									3 4/12/94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SBLK

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL — Lab Sample ID: 94LE0070-MB1

Sample wt/vol: 30.0 (g/mL) G — Lab File ID: L012406

Level: (low/med) LOW — Date Received: 01/13/94

% Moisture: _____ decanted: (Y/N)__ — Date Extracted: 01/13/94

Concentrated Extract Volume: 500(uL) — Date Analyzed: 01/24/94

Injection Volume: 2.0(uL) — Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	840	U
100-02-7	4-Nitrophenol	840	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	840	U
534-52-1	4,6-Dinitro-2-methylphenol	840	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	840	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	50	J
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octyl phthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

94LE0070.0800

4/12/94

0165

022

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot
58	NOT FOUND								
59	NOT FOUND								
60	NOT FOUND								
61	NOT FOUND								
62	NOT FOUND								
63	NOT FOUND								
64	NOT FOUND								
65	NOT FOUND								
66	NOT FOUND								
67	NOT FOUND								
68	NOT FOUND								
69	NOT FOUND								
70	149	1208	20:08	4	1.070	A BB	9001.	3.001 NG	0.28 ✓
71	NOT FOUND								
72	NOT FOUND								
73	NOT FOUND								
74	NOT FOUND								
75	NOT FOUND								
76	NOT FOUND								
77	149	1467	24:27	5	0.993	A BB	249.	0.210 NG	0.02 BFHP
78	NOT FOUND								
79	NOT FOUND								
80	NOT FOUND								
81	NOT FOUND								
82	NOT FOUND								
83	NOT FOUND								
84	NOT FOUND								
85	NOT FOUND								
86	NOT FOUND								

94427.080

speaker/LIMS - 1602/16/94

SBK

VR 12/16/94

0172

-023

9453549D
~~9452475D~~
ATTACHMENT 42
Page 1 of 19

VOLATILES DATA VALIDATION SUMMARY FOR DATA PACKAGE:
9401L205-WES-1478 (923-E418)

MEMORANDUM

TO: 200-UP-2 Project QA Record April 23, 1994

FR: Sandra Schildt, Golder Associates Inc. for

RE: VOLATILES DATA VALIDATION SUMMARY FOR DATA PACKAGE 9401L205-WES-1478 (923-E418)

INTRODUCTION

This memorandum presents the results of data validation on data package 9401L205-WES-1478 prepared by Roy F. Weston, Inc. (Weston). A list of the samples validated along with the analytes reported and the method of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09DT0	1/06/94	SOIL	SEE NOTE 1

Note 1: The samples were analyzed for CLP volatile target compound list (TCL) organics.

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 to this memo provide the following information:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Revised 4-25-94

Completeness. The data package was complete for all requested analyses. One sample (1) was validated in this data set with a total of 33 determinations reported, all of which were deemed valid. This results in a completeness of 100% which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

No minor deficiencies were identified during validation which required qualification of data.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993, Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

UJN- Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected due to associated blank contamination.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

~~SDG:~~ PKG 94011205-WES-1478	VALIDATOR: A. Schlobohm	DATE: 4/4/94	PAGE 1 OF 1
COMMENTS: Volatiles			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
No qualification required			

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: 9401L205-WES-1478

Parameter	Units	Samp# 809DTO Date 1-6-94 Location --- Depth --- Type --- Comments --- Result	Q
CHLOROMETHANE	UG/KG	10.000	U
BROMOMETHANE	UG/KG	10.000	U
VINYL CHLORIDE	UG/KG	10.000	U
CHLOROETHANE	UG/KG	10.000	U
METHYLENE CHLORIDE	UG/KG	10.000	U
ACETONE	UG/KG	10.000	U
CARBON DISULFIDE	UG/KG	10.000	U
1,1-DICHLOROETHENE	UG/KG	10.000	U
1,1-DICHLOROETHANE	UG/KG	10.000	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	10.000	U
CHLOROFORM	UG/KG	10.000	U
1,2-DICHLOROETHANE	UG/KG	10.000	U
2-BUTANONE	UG/KG	10.000	U
1,1,1-TRICHLOROETHANE	UG/KG	10.000	U
CARBON TETRACHLORIDE	UG/KG	10.000	U
BROMODICHLOROMETHANE	UG/KG	10.000	U
1,2-DICHLOROPROPANE	UG/KG	10.000	U
CIS-1,3-DICHLOROPROPENE	UG/KG	10.000	U
TRICHLOROETHENE	UG/KG	10.000	U
DIBROMOCHLOROMETHANE	UG/KG	10.000	U
1,1,2-TRICHLOROETHANE	UG/KG	10.000	U
BENZENE	UG/KG	10.000	U
TRANS-1,3-DICHLOROPROPENE	UG/KG	10.000	U
BROMOFORM	UG/KG	10.000	U
4-METHYL-2-PENTANONE	UG/KG	10.000	U
2-HEXANONE	UG/KG	10.000	U
TETRACHLOROETHENE	UG/KG	10.000	U
1,1,2,2-TETRACHLOROETHANE	UG/KG	10.000	U
TOLUENE	UG/KG	10.000	U
CHLOROBENZENE	UG/KG	10.000	U
ETHYLBENZENE	UG/KG	10.000	U
STYRENE	UG/KG	10.000	U
XYLENES (TOTAL)	UG/KG	10.000	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B09DT0

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 9401L205-001

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: 0011312

Level: (low/med) LOW

Date Received: 01/11/94

% Moisture: not dec. 2

Date Analyzed: 01/13/94

GC Column: SP1000 ID: 2.00(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

Verified 1/11/94

0027.001

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B09DT0

Lab Name: Roy F. Weston, Inc. Work Order: 06168002001

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) SOIL

Lab Sample ID: 9401L205-001

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: 0011312

Level: (low/med) LOW

Date Received: 01/11/94

% Moisture: not dec. 2

Date Analyzed: 01/13/94

GC Column: SP1000 ID: 2.00(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

9401205.0012

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

WESTON

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9401L205

W.O. #: 06168-002-001-9999-00
Date Received: 01-11-94

GC/MS VOLATILE

One (1) soil sample was collected on 01-06-94.

The sample and its associated QC samples were analyzed according to criteria set forth in CLP SOW 03/90 for TCL Volatile target compounds on 01-13,14-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Non-target compounds were not detected in these samples.

2. All system monitoring compound (surrogate) recoveries were within EPA QC limits.

3. All matrix spike recoveries were within EPA QC limits.

4. The laboratory blanks contained the common contaminant Acetone at levels less than 3x the CRQL.

5. All internal standard area and retention time criteria were met.

6. Sample pH information has been reported in Section XI (Preparation Logs).

Manager JP Hershey for

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

2/14/94
Date

sma/voa/01-205v.cn

012

9401L205

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator L E ROGERS, W.U SETZER

Company Contact L E ROGERS — Telephone 376-7690

Project Designation/Sampling Locations 200-UP-2 — Collection Date 1-6-94

Ice Chest No. EFS-11 — Field Logbook No. EFL-1091

Bill of Lading/Airbill No. NA — Offsite Property No. ORSC 17596

Method of Shipment OVERNIGHT AIR SERVICE

Shipped to WESTON

Possible Sample Hazards/Remarks Keep samples at 4C (SOIL) RADIOACTIVE

Sample Identification 9401L205-001

1) BOGSTO

1,500ml P:CLP;TAL Metals,Hg,Ti Did not Recd GG 1-11-94
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

9401L205-001

2)

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

LER 1-10-94

3)

1,500ml P:CLP;TAL Metals,Hg,Ti
1,125ml Gs:VOA CLP
1,500ml aG:Semi-VOA CLP
1,250ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.1)
1,250ml G:Cyanide CLP
1,1000ml P/G:Gross alpha/beta (PRO-032-15), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22 (PRO-042-5), U-235,U-234,U-238 (PRO-052-32) Np-237,(PRO-042-5) Pu-238,Pu-239/240 (PRO-052-32) Sr-90 (PRO-032-38,PRO-032-25) Tc-99 (PRO-032-78) Am-241,Cm-244 (PRO-052-32 or PRO-062-109) Se-79

[ ] Field Transfer of Custody

Chain of Possession (Sign and Print Names)		
Relinquished by: W.U. Setzer 1115 1-6-94	Received by: Karen E. Rogers	Date/Time: 1-6-94 1115
Relinquished by: Karen E. Rogers 1-10-94 0715	Received by: W.U. Setzer	Date/Time: 1-10-94 0715
Relinquished by: W.U. Setzer	Received by:	Date/Time:
Relinquished by: FEDEX	Received by:	Date/Time: 1-11-94 9:30

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

0013

0013

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

GC/MS ORGANIC DATA VALIDATION CHECKLIST

4/11/94

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-UP-2			DATA PACKAGE: 9411205-WES-1478		
VALIDATOR: A. Schlobohm		LAB: Weston		DATE: 4/4/94	
CASE: NA			SDG: NA		

ANALYSES PERFORMED

☒ CLP Volatiles	☐ SW-846 8240 (cap column)	☐ SW-846 8260 (packed column)	☐ CLP Semivolatiles	☐ SW-846 8270 (cap column)	☐ SW-846 (packed column)
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX B09DT0 / soil

9417225.0817

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . (Yes) No N/A

Is a case narrative present? . . . . . (Yes) No N/A

Comments: _____

2. HOLDING TIMES

Are sample holding times acceptable? . . . . . (Yes) No N/A

Comments: _____

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. INSTRUMENT TUNING AND CALIBRATION

Is the GC/MS tuning/performance check acceptable? . . . . . (Yes) No N/A

Are initial calibrations acceptable? . . . . . (Yes) No N/A

Are continuing calibrations acceptable? . . . . . (Yes) No N/A

Comments: _____

4. BLANKS

Were laboratory blanks analyzed? . . . . . (Yes) No N/A

Are laboratory blank results acceptable? . . . . . Yes (No) N/A

Were field/trip blanks analyzed? . . . . . Yes No (N/A)

Are field/trip blank results acceptable? . . . . . Yes No (N/A)

Comments: Sample information was not provided. Field QC samples will be evaluated in the summary report.

Acetone detected in lab blank but no detect in sample results : no qualification.

5. ACCURACY

Were surrogates/System Monitoring Compounds analyzed? . . . . . (Yes) No N/A

Are surrogate/System Monitoring Compound recoveries acceptable? (Yes) No N/A

Were MS/MSD samples analyzed? . . . . . (Yes) No N/A

Are MS/MSD results acceptable? . . . . . (Yes) No N/A

Comments: _____

GC/MS ORGANIC DATA VALIDATION CHECKLIST

6. PRECISION

Are MS/MSD RPD values acceptable? . . . . . (Yes) No N/A

Are field duplicate RPD values acceptable? . . . . . Yes No (N/A)

Are field split RPD values acceptable? . . . . . Yes No (N/A)

Comments: Sample information was not available. Field QC results will be evaluated in the summary report.

7. SYSTEM PERFORMANCE

Were internal standards analyzed? . . . . . (Yes) No N/A

Are internal standard areas acceptable? . . . . . (Yes) No N/A

Are internal standard retention times acceptable? . . . . . (Yes) No N/A

Comments:

8. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . (Yes) No N/A

Is compound quantitation acceptable? . . . . . (Yes) No N/A

Comments: Ion 43 indicative of 2-butanone, was detected at a concentration > 1 µg/L but the R/C was not included to verify presence of ion 72 which is required for positive identification. No qualification required. All reported results have non-detects.

9. REPORTED RESULTS AND QUANTITATION LIMITS

Are results reported for all requested analyses? . . . . . (Yes) No N/A

Are all results supported in the raw data? . . . . . (Yes) No N/A

Do results meet the CRQLs? . . . . . (Yes) No N/A

Has the laboratory properly identified and coded all TIC? . . . Yes No (N/A)

Comments:

HOLDING TIME SUMMARY

SDG: 9401L205 - WES 1478	VALIDATOR: A. Schibler	DATE: 4/4/94	PAGE 1 OF 1
COMMENTS: Volatiles			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
BC90T0	V:A	1/6/94	1/13/94	1/13/94	7	7	none